

Redfern Br. 13,257

Fig. 3. Aug. 22, 1890

Fig. 4.

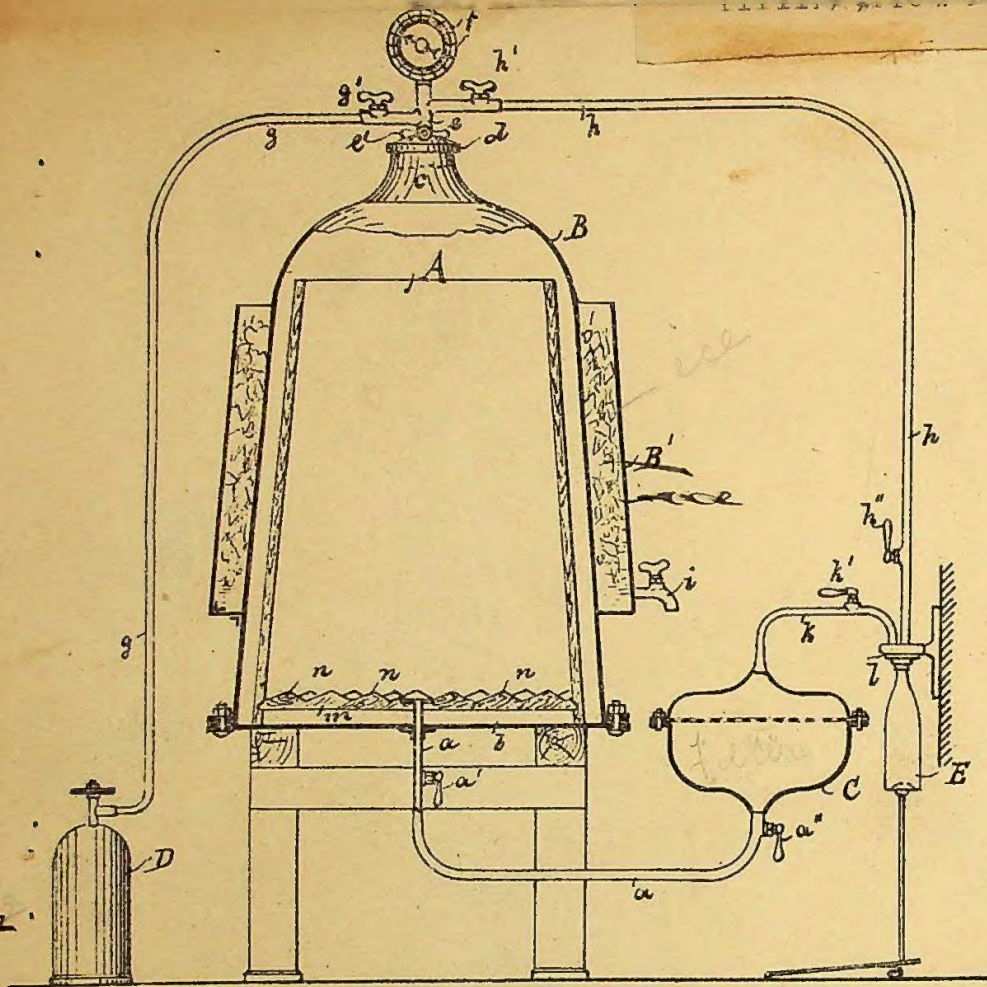
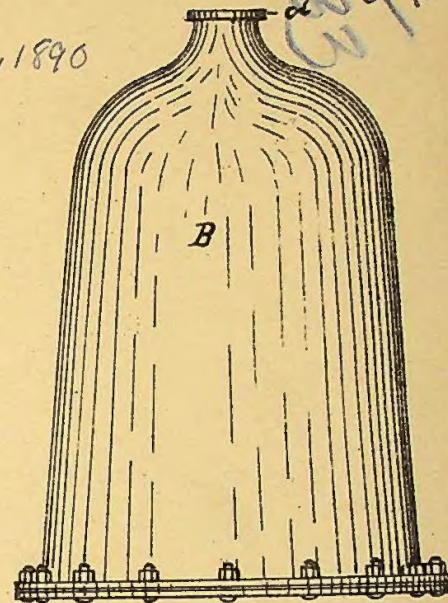
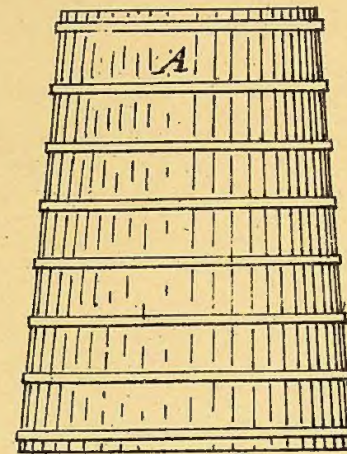
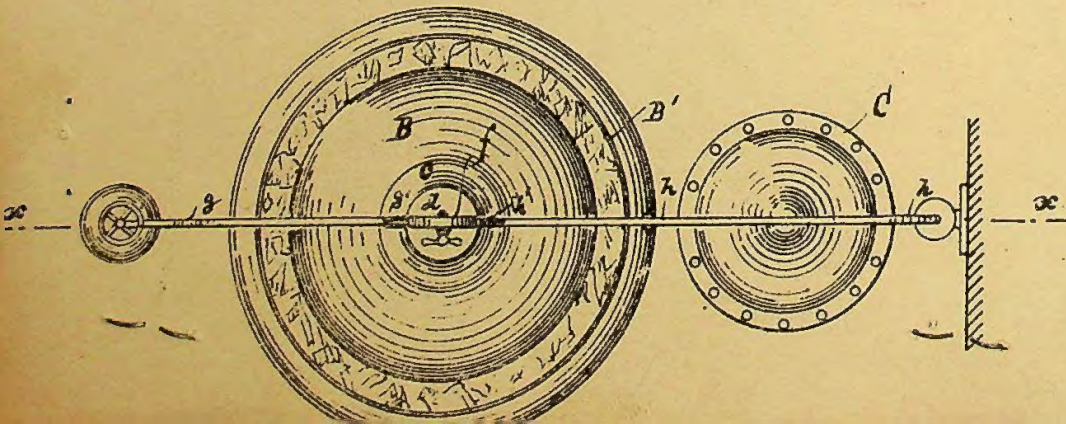
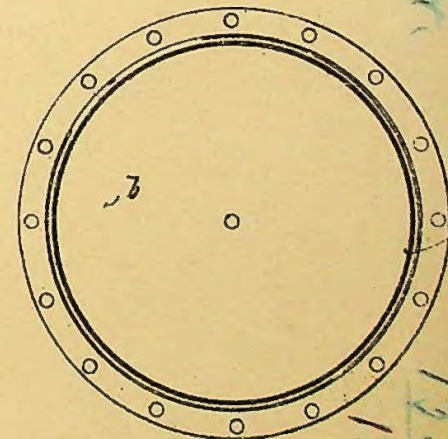
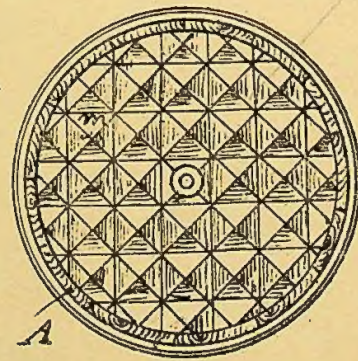


Fig. 2.



DIV. 31



to retain wine press.

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N° 13,257



A.D. 1890

Date of Application, 22nd Aug., 1890—Accepted, 27th Sept., 1890

COMPLETE SPECIFICATION.

Improvements in the Manufacture of Wine and in Apparatus therefor.

I, GEORGE FREDERICK REDFERN, of the firm of G. F. Redfern & Co., the General Patent Office, No. 4, South Street, Finsbury, in the County of London, Patent Agents, do hereby declare the nature of this invention (a communication from abroad by Gustav Perscheid, of Jersey City, in the United States of America) and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

This invention relates to a method of manufacturing effervescing or sparkling wines and to apparatus therefor whereby a bright and perfectly clear wine is produced directly the fermentation is completed; the settlement of lees on the bottoms of the bottles when they are being filled is avoided and the time required for manufacturing the wine is materially reduced.

According to this invention the manufacture of wines is effected similarly to the manufacture of champagne that is to say, without the employment of artificial carbonic acid, but the clarification of the wine takes place in the apparatus instead of in the bottles.

By this means not only is a great saving of time effected but the moving and frequent shaking and turning of the bottles during the period of fermentation and also the washing out of the bottles after the fermentation is over are completely avoided. The wine to be treated is placed in a strong wooden vat or cask over which is arranged an airtight receiver provided with a manometer and a draw off tube. By this means the carbonic acid given off during the fermentation of the wine is collected and prevented from escaping and after the fermentation and clarification are completed it can be introduced into the bottles together with the wine, during which process the lees which have already mainly been deposited in the vat can be completed separated from the wine so as to render it perfectly clear, by a suitable filtering apparatus before it is introduced into the bottles. The retention of the lees in the vat is assisted by providing the bottom with a number of protuberances or their equivalents.

To enable the invention to be fully understood, I will describe how it can be carried into practice by reference to the accompanying drawing in which

Figure 1 is a vertical section of an apparatus which I have designed and found suitable for the manufacture of wine according to my invention the section being taken on the line *x x* of Figure 2.

Figure 2 is a plan of the said apparatus.

Figure 3 is an elevation and plan of the wooden vat and

Figure 4 represents similar views of the receiver.

A is the open wooden vat provided with a draw off tube *a* and above which a vessel or receiver B is arranged for receiving the carbonic acid disengaged during the fermentation.

The draw-off tube *a* of the wooden vat A passes through the bottom *b* of the receiver B and leads to a filter C.

The neck of the receiver B is closed by a cover *d* provided with a tube *e* having a cock *e*¹. In connection with the tube *e* is a manometer *f* and two lateral tubes *g* and *h* having cocks *g*¹ and *h*¹ respectively.

The tube *g* leads to a vessel D which serves to receive any excess of carbonic acid gas which may be set free during the fermentation. The tube *h* conducts the carbonic acid to the bottle. The receiver B is further provided with an ice-jacket B¹. The cock *i* serves to withdraw water from the ice-jacket. The filter C has a draw off tube *k* which also leads to the bottle. The cock *k*¹ in the tube *k* serves to establish

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Redfern's Improvements in the Manufacture of Wine and in Apparatus therefor.

or cut off communication with the bottle. The bottle E while being filled is pressed in the usual way against a mouth piece *l* in which the ends of the tubes *k* and *h* are fitted.

The bottom of the vat A is furnished with projections or protuberances which tend to retain the deposit which is formed in the vat during the fermentation and so allow the wine to flow out through the draw off tube *a* in a clarified condition.

Any particles of lees which might be carried through with the wine are stopped by the filter C placed at the end of the tube *a*.

The apparatus is used in the following manner :—

The wine to be treated is first poured into the vat A during which the draw off cock *a*¹ must be closed and the air is excluded by placing on the cover *d*.

The cock *e*¹ is opened and the cocks *g*¹ and *h*¹ are shut.

As soon as fermentation commences carbonic acid gas is generated and is collected in the enclosed space of the receiver B. The pressure thus produced is indicated by the manometer or pressure gauge *f*. As soon as the pressure exceeds a certain degree the cock *g*¹ is opened and the excess of carbonic acid gas flows through the tube *g* to the vessel D. When the fermentation is completed the jacket B¹ is filled with ice in order to cool the wine contained in the vat A. The lees which have been formed during the process fall to the bottom and form a sediment which fills up the spaces between the projections with which it is provided. A period of 12 hours is required for this precipitation to be completed.

The wine which has been clarified in this manner is forced through the tube *a*, filter C and tube *k* to the mouthpiece *l* and finally into the bottle E. The cocks *h*¹ and *h*¹¹ in the tube *h* are open during this part of the process so that both wine and carbonic acid gas enter the bottle E through the mouthpiece *l*. The carbonic acid gas which passes off from the receiver B is replaced by that contained in the vessel D so that during the filling operation the pressure inside the receiver B continues.

By this process the fermentation and clarification of the wine which is to be converted into effervescing or sparkling wine take place in a relatively short time in the vat A or in other words inside the receiver B and the fermentation may further be hastened by raising the temperature and a saving of time and money is effected.

Having now particularly described and ascertained the nature of the said invention, and in what manner the same is to be performed I declare that what I claim is

(1) The herein described method of manufacturing effervescing or sparkling wines, by fermenting and clarifying the wine in a vat surrounded by a receiver in such a manner that the carbonic acid gas set free during the fermentation is collected, and introduced into the bottle simultaneously with the clarified wine.

(2) The improved apparatus for manufacturing effervescing or sparkling wines comprising a vat open at the top and provided with a draw-off tube *a* and placed inside an air tight receiver fitted with tubes for conveying the carbonic acid gas to the vessel D and to the bottle to be filled; a draw off tube whereby the fermented and clarified wine is drawn off from the vat; protuberances with which the bottom is provided for keeping back the lees, and a tube connected with a filter for preventing the passage of particles of lees to the bottle substantially as hereinbefore described and illustrated in the accompanying drawing.

Dated the 22nd day of August 1890.

G. F. REDFERN & Co.,
4, South Street, Finsbury, London, Agents for the Applicant.